



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549-4628

May 12, 2010

Via U.S. Mail

Mr. John T. Drexler
Senior Vice President and Chief Financial Officer
Arch Coal, Inc.
One CityPlace Drive, Suite 300
St. Louis, Missouri 63141

**Re: Arch Coal, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2009
Filed March 1, 2010
Definitive Proxy Statement on Schedule 14A
Filed March 22, 2010
File Number 1-13105**

Dear Mr. Drexler:

We have reviewed your filings and have the following comments. Please provide a written response to our comments. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filings. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K for year ended December 31, 2009

General

1. Reference to your consolidated income statement as well as to disclosure at note 18 on page F-39 suggests that Tennessee Valley Authority has accounted for more than 10% of your revenues for each of the past three years. At page 15, you indicate that you sold 72% of your coal in 2009 under long-term supply agreements. You discuss at page 33 the risk that "The loss of, or significant

reduction in, purchases by our largest customers could adversely affect our profitability.” You also indicate at page 17 that you use “sole source suppliers for certain parts of our business such as explosives and fuel....” Ensure that you describe in the filing in necessary detail the material terms of all material contracts and file such contracts as exhibits pursuant to Item 601(b)(10)(ii)(B) of Regulation S-K.

Management’s Discussion and Analysis of Financial Condition and Results of Operations, page 48

2. Disclosure in the Business section of your filing indicates that coal production in the Appalachian region has declined in recent years primarily as a result of the depletion of economically attractive reserves, permitting issues and increasing costs of production and that you expect these trends to continue. Separately, we note that the segment information included in the notes to your financial statements indicates that, for the most recent two years, your central Appalachian segment has generated a disproportionate share of your operating income, relative to the sales generated by each of your segments. In view of the significance of your central Appalachian segment, you should disclose the material impacts that the identified trends have had, or are reasonably likely to have, on your financial condition, results of operations or liquidity. Additionally, you should disclose any actions that you have taken, or plan to take, to offset the impacts of the identified trends.

Definitive Proxy Statement on Schedule 14A filed March 22, 2010

General

3. Please confirm in writing that you will comply with the following comments relating to your proxy in all future filings, and provide us with an example of the disclosure you intend to use in each case. After our review of your responses, we may raise additional comments.
4. We note that you have not included any disclosure in response to Item 402(s) of Regulation S-K. Please advise us of the basis for your conclusion that disclosure is not necessary and describe the process you undertook to reach that conclusion.

Engineering Comments

Definitive Proxy Statement on Schedule 14A filed March 22, 2010

Elements of Our Compensation Program, page 33

5. In your Definitive Proxy Statement we note you state “we generally establish safety and environmental performance targets based on our prior performance history with the objective of promoting improvements in those areas.” In an appropriate section of your 10-K filing, please include a discussion of your safety performance referencing capital expenditures, safety programs, and statistical measures such as those reported to the MSHA or any other measures that your organization utilizes to monitor performance.

Closing Comments

Please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a letter that keys your responses to our comments and provides any requested information. Detailed letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company’s disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

John T. Drexler
Arch Coal, Inc.
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You may contact Craig Arakawa at (202) 551-3650 or Brad Skinner, Senior Assistant Chief Accountant, at (202) 551-3489 if you have questions regarding comments on the financial statements and related matters. You may contact John Coleman, Mining Engineer, at (202) 551-3610 with questions about engineering comments. Please contact Tracey L. McNeil at (202) 551-3392, or in her absence, Timothy Levenberg, Special Counsel, at (202) 551-3707 or me at (202) 551-3740 with any other questions.

Sincerely,

H. Roger Schwall
Assistant Director

